STEM EXPLORERS 2025

Ockerman Middle School

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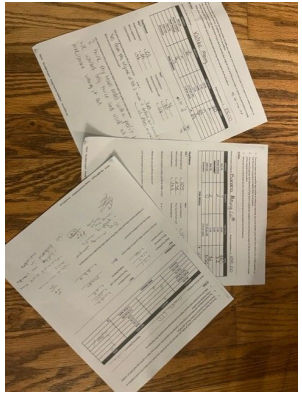
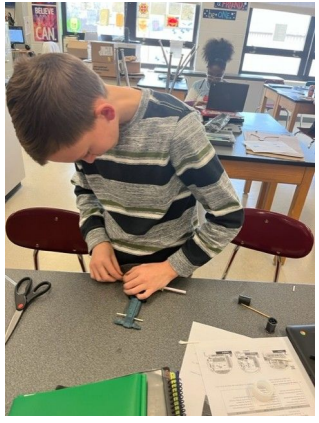
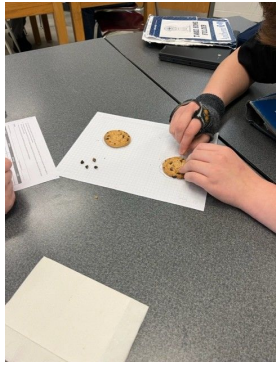
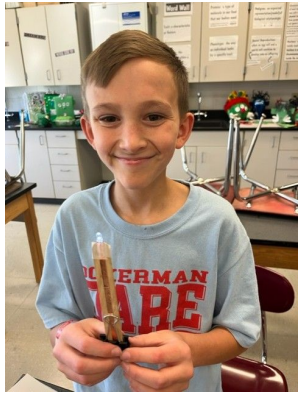
Summary

Ockerman STEM Explores is a club that meets after school. We started the year looking at circuits and solar energy. We shared these activities at the Evening with the Arts. They we did different activities with potential and kinetic energy. We took what we learned from our potential and kinetic energy activities to help design our 3D Printer cars for our 3D Printer Derby. We also learned about the different sources of energy.





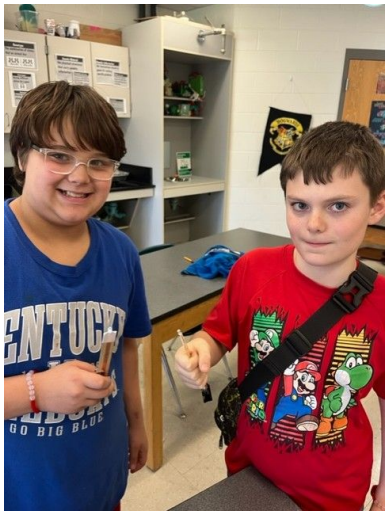




Exploring Circuits

NEED Activity: Sidekick Circuits

We learned about circuits using the Sidekick Circuits activity. We also use the copper tap
make circuit flashlights. We also explored with Little Bits circuit kits.

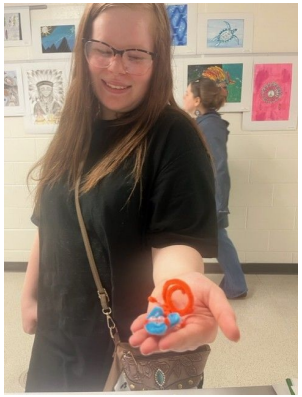


Solar Energy

NEED Activity: Solar Chameleon

We use UV solar beads to make solar chameleons and solar bracelets.

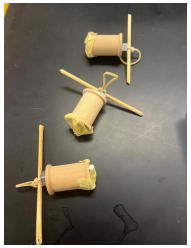
Evening with the Arts

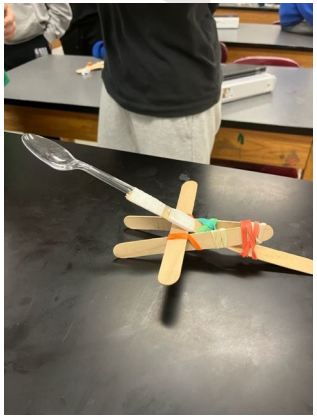


NEED Activities: Solar Chameleon and Sidekick Circuits

This is a big event where our jazz band, chorus, drama and art students perform for parents and families. We set up a table to have some of our students and their brothers and sisters learn about solar energy and circuits.

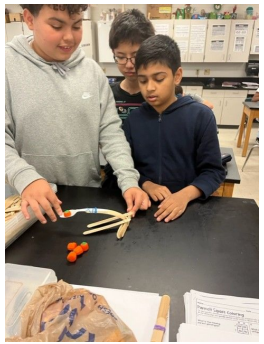
Potential & Kinetic Energy

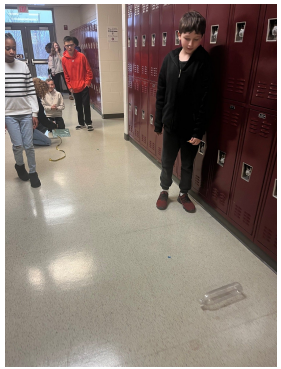




Activities: Rubber Band Cars (Science Buddies), Wooden Spool Car, Spoon Catapult, Ramp & Roll

First we learned about elastic potential energy. We made catapults to launch pumpkin candy. Then we made wooden spool cars that went in circles when you wind them up. We made one big rubber band powered car. It went forward and the backwards when the rubber band winded back up. We then learned about gravitational potential energy. We looked at how far down a ramp an empty water bottle went compared to a full water bottle.

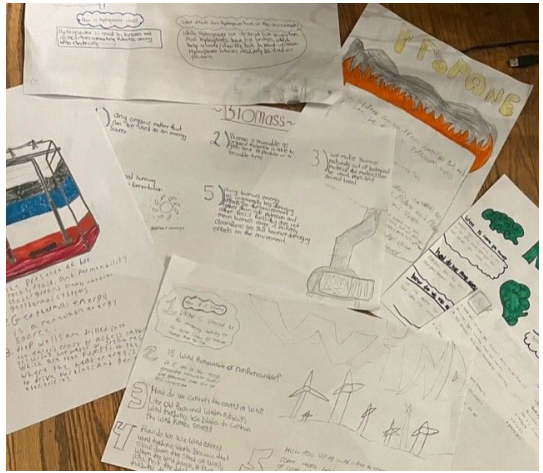




3D Printer Derby

We worked with the Greater Cincinnati STEM Collaborative to get a 3D Printer and take part in the GCSC 3D Printers Showcase. We chose to do the 3D Printer Derby. We used what we learned about potential and kinetic energy to design and build cars to race down a ramp. We went to the 3D Printers Showcase at the University of Cincinnati to show off what we did.

Sources of Energy



NEED Activities: Energy Round Up, Energy Source Expo, Cookie Coal Mining

We started learning about the sources of energy by doing the Energy Round Up. We then got divided into groups to research one of the energy sources. We did a gallery walk to learn about the other sources that we did not do. Then we did the Energy Round Up again and we improved a lot. We also did an activity with cookies to model a coal company and try to make a profit coal mining.